PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

James G. Shanahan et al.

Application No.: 09/543,962

Filed: April 7, 2000

Confirmation No. 2107

Examiner: Maikhanh Nguyen

Docket No.: 99458-US-NP

For: META-DOCUMENT AND METHOD OF MANAGING

BRIEF ON APPEAL

Appeal from Group 2176

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal and the present application is Xerox Corporation, by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 10747, Frame 423-424.

II. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellants, Appellants' representative, or the Assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon the Board's decision in the pending appeal.

The corresponding European Patent Application No. 01303198.4 was granted as a European Patent on April 4, 2001, with European Patent No. 1143356.

III. STATUS OF CLAIMS

Claims 1-37 are on appeal.

Claims 1-37 are pending.

Claims 1-37 are rejected.

IV. STATUS OF AMENDMENTS

No Amendment after Final Rejection has been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Knowledge management through document management forms an important part of the knowledge creation and sharing lifecycle. A typical model of knowledge creation and sharing is cyclical, consisting of three main steps: synthesizing (search, gather, acquire and assimilate), sharing (present, publish/distribute), and servicing (facilitate document use for decision making, innovative creativity). Currently documents are considered static objects which only acquire new content when acted upon by an authorized user. A user's decision to read and modify a document, or to run a program on it which may change its contents (for example, by adding hyperlinks), is needed for the document to acquire new information. This view of the document as a passive repository leads to the current situation in which most computers remain idle, documents sleeping on disks, unless a user is in front of the screen piloting the system. Instead of trying to do something useful, or trying to predict what a user would like to see associated with a document, documents just lie around doing nothing on inactive computers. Both agent-based systems and content-based retrieval systems provide some management of information without user intervention. An agent is a software program that performs a service, such as alerting the user of something that needs to be done on a particular day, or monitoring incoming data and giving an alert when a message has arrived, or searching for information on electronic networks. An intelligent agent is enabled to make decisions about information it finds. Both such systems, however, consider documents to be fixed and static entities.

Appellants' document-based system overcomes the disadvantages of prior systems by treating documents as active agents in the knowledge creation and sharing lifecycle. A meta-document is an active agent in the knowledge creation and sharing cycle and operates without user intervention, searching, collecting and adding information to the original document. Since user intervention is not required for a meta-document to add to the document's knowledge, the meta-document can operate during idle computer cycles.

Appellants' document-based system and method turns documents from a push technology, where items of content are sent to the document in a sequence, and at a rate, determined by a user, to a pull technology, where the document requests each item individually. Rather than creating a user-centric view of a document or a document collection, Appellants' system provides a document-centric metaphor, which Appellants call "Document Souls" in

which each document can be considered to have a "soul" such that the Document Soul seeks to create an image of the world in light of its own contents.

The invention of Claim 1 is directed to a document-based system for acquiring information pertaining to a document, (patent application, [hereinafter "pa"] page 38, lines 4-5), comprising: a computer having a memory (pa page 1, lines 18-20 and page 8, line 20-23 and page 9, lines 21-27) storing a meta-document (pa page 5, line 9) including the document (pa page 5, line 10), the document including content information (pa page 3, lines 4-6), and a set of pre-packaged document service requests based on a personality associated with the document (pa page 3, lines 12-13), wherein a personality comprises a theme or context (pa page 3, line 16), wherein a document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information (pa page 3, lines 6-7 and lines 9-10), wherein associating a set of document service requests based on a different personality to the document content information will provide different results (pa page 11, lines 14-16 and pa page 3, lines 13-18); and a scheduler for autonomously (pa page 1, lines 5-8 and page 22, lines 21-22) activating and managing the document service requests (pa page 3, lines 7-10) without user intervention by periodically polling the meta-document for document service requests (pa page 10, lines 10-11 and page 12, lines 5-15), for selecting a document service request from the set of document service requests (pa page 12, lines 5-15), for initiating and managing communication with a selected service provider to satisfy the selected document service request (pa page 12, lines 5-15) and for integrating any results from the selected document service request into the meta-document (pa page 6, line 7 and page 27, lines 17-18), wherein the meta-document includes the document content, the set of document service requests and integrated results.

The invention of Claim 19 is directed to a computer implemented document-centric (pa page 1, lines 18-20 and page 8, line 20-23 and page 9, lines 21-27) method for acquiring information pertaining to a document (pa page 40, lines 6-7), comprising: creating a meta-document (pa page 5, line 9) comprising providing the document (pa page 5, lines 10-11), the document including content information (pa page 3, lines 4-6), associating a set of pre-packaged document service requests (pa page 3, lines 11-12) based on a personality (pa page 3, line 12) with the document, wherein a personality comprises a theme or context (pa page 3, lines 11-12), wherein a document service comprises a process for using a portion of the document's content

information as a starting point to obtain other information from a service provider pertaining to the document's content information (pa page 3, lines 6-7 and lines 9-10), wherein associating a set of document service requests based on a different personality to the document content information will provide different results (pa page 11, lines 14-16 and pa page 3, lines 13-18); and autonomously activating and managing the document service requests without user intervention (pa page 1, lines 5-8, page 22, lines 21-22, page 3, lines 7-11), comprising: periodically polling the meta-document for document service requests (pa page 12, line 8); selecting a document service request from the set (pa page 40, line 11); initiating and managing communication with the service provider to satisfy the selected document service request (pa page 40, lines 12-13); and integrating any results from the selected document service request into the meta-document (pa page 40, line 14), wherein the meta-document includes the document, the set of document service requests (pa Fig. 1) and integrated results (page 6, line 7).

The invention of Claim 28 is directed to a computer-readable medium (pa page 1, line 19) storing a meta-document (page 5, line 10), comprising: a document including content information (page 41, line 15); a set of pre-packaged document service requests based on a personality (pa page 3, lines 11-13), associated with the document (pa page 3, lines 5-6), wherein a personality comprises a theme or context (pa page 3, lines 12-13), wherein a document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information (pa page 3, lines 6-7 and lines 9-10), wherein associating a set of document service requests based on a different personality to the document content information will provide different results (pa page 11, lines 14-15); and wherein, responsive to an autonomous pa page 1, lines 5-8, page 22, lines 21-22, page 3, lines 7-11 scheduler that periodically polls the meta-document for document service requests (pa page 12, line 8), a document service request is selected from the set (pa page 41, line 17), and communication with a selected service provider to satisfy the selected document service request is initiated and managed (pa page 41, lines 18-19); and wherein, responsive to the autonomous scheduler (pa page 41, lines 20-21), any results from the selected document service request are integrated into the meta-document, wherein the meta-document includes the document, the set of document service requests (pa Fig. 1) and integrated results (pa page 6, line 7).

Static documents generally consist of content and meta-data, such as size, owner creation

date, etc. Appellants' meta-document extends this traditional notion of a document, along the lines of the document-centric metaphor, Document Souls, with various anthropomorphic and intelligent behaviors. These behaviors (which are provided by activation of particular document service requests) include: the ability to understand and describe its contents; the ability to communicate; the ability to learn and adapt to changing environments/situations; and the ability to assist the user with content creation. These behaviors (implemented by the set of document service requests) turn a document from a piece of static data into an intelligent document assistant with various responsibilities to its creators and to the societies of documents in which it exists. If the behaviors, i.e., the set of document service requests, associated with the document are chosen to have a common theme, then keeping the metaphor, the meta-document becomes a Document Soul with a particular personality.

The invention of dependent Claim 2 is directed a document-based system in which the personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic (pa page 3, lines 16-17; page 15, line 11; page 15, line 16). The invention of dependent Claim 20 is directed to a computer-implemented document-centric method in which personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic (pa page 3, lines 16-17; page 15, line 11; page 15, line 16). The invention of dependent Claim 29 is directed to a computer-readable medium storing a meta-document in which the personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic (pa page 3, lines 16-17; page 15, line 11; page 15, line 16).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

Claims 1-37 are rejected under 35 U.S.C. §103(a) as being unpatentable over Barrera et al. (U.S. Patent No. 6,567,800) in view of Doyle (U.S. Patent No. 6,510,432).

VII. ARGUMENT

Knowledge management through document management forms an important part of the knowledge creation and sharing lifecycle. A typical model of knowledge creation and sharing is cyclical, consisting of three main steps: synthesizing (search, gather, acquire and assimilate), sharing (present, publish/distribute), and servicing (facilitate document use for decision making, innovative creativity). In the prior art documents are considered static or passive objects which only acquire new content when acted upon by an authorized user. A user's decision to read and modify a document, or to run a program on it which may change its contents (for example, by adding hyperlinks), is needed for the document to acquire new information.

The meta-document, system and method according to the invention overcome the disadvantages of the prior systems by treating documents as active agents in the knowledge creation and sharing lifecycle. A meta-document according to the invention is an active agent in the knowledge creation and sharing cycle and operates without user intervention, searching, collecting and adding information to the original document. Since user intervention is not required for a meta-document to add to the document's knowledge, the meta-document can operate during idle computer cycles.

The invention turns documents from a push technology, where items of content are sent to the document in a sequence, and at a rate, determined by a user, to a pull technology, where the document requests each item individually. Rather than creating a user-centric view of a document or a document collection, the invention provides a document-centric metaphor, which Appellants call "Document Souls" in which each document can be considered to have a "soul" such that the Document Soul seeks to create an image of the world in light of its own contents.

Static documents generally consist of content and meta-data, such as size, owner creation date, etc. The meta-document of the invention extends this traditional notion of a document, along the lines of the document-centric metaphor, Document Souls, with various anthropomorphic and intelligent behaviors. These behaviors (which are provided by activation of particular document service requests) include: the ability to understand and describe its contents; the ability to communicate; the ability to learn and adapt to changing environments/situations; and the ability to assist the user with content creation. These behaviors (implemented by the set of document service requests) turn a document from a piece of static

data into an intelligent document assistant with various responsibilities to its creators and to the societies of documents in which it exists. If the behaviors, i.e., the set of document service requests, associated with the document are chosen to have a common theme, then keeping the metaphor, the meta-document becomes a Document Soul with a particular personality.

A. Claims 1-37 are patentable over Barrera et al. (U.S. Patent No. 6,567,800) in view of Doyle (U.S. Patent No. 6,510,432).

1. Barrera et al. is user-centric; Appellants' meta-document is document-centric.

Barrera et al's system and method is user-centric. Barrera et al. is concerned with improving search results for user. Barrera et al. describes a system and method for searching information stored on websites. Barrera et al.'s system is a standard search engine, in that a user opens a web browser, the user navigates to the search engine website, the user selects a topic to search (the user types in a search request or clicks on a pre-defined category) and the search engine returns results which are displayed in a page of a web browser. Barrera et al. is concerned with the problem of returning better results than other search engines (such as Yahoo and Alta Vista). Barrera et al. describes a system for searching websites that combines category searching with content searching. In the system of Barrera et al. the scope of a search is first narrowed by identifying websites that correspond with a category pertinent to the desired information. Next a keyword search is carryout out on the content of websites that fall within the pertinent category (see col. 2, lines 55-61).

Appellants are concerned with the problem of passive documents. A meta-document is an active agent in the knowledge creation and sharing cycle and operates without user intervention, searching, collecting and adding information to the original document. Appellants' meta-document includes a document including content information and a set of pre-packaged document service requests. A document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information. Instead of a user requesting a standard search as in Barrera et al., Appellants' meta-document, responsive to an autonomous scheduler that periodically polls the meta-document for document service requests, a document service request is selected from the set, and communication with a selected service provider to

satisfy the selected document service request is initiated and managed.

2. Doyle is not document-centric.

Doyle teaches a system and method for archiving information from a plurality of web servers by specifying at least one topic to be searched. See col. 1, lines 41-44. Doyle is concerned with updating and archiving topical search results. Doyle teaches identifying a document associated with at least one topic and analyzing the document so as to identify characteristics of the document associated with the at least one topic associated with the document. A search may be developed based on the identified characteristics of the document so as to search for information associated with the at least one topic. See col. 2, lines 19 - 26. Documents are useful to Doyle's system only in so far as they provide additional information pertaining to the at least one topic.

3. Barrera et al. uses a spider to search content and store results in a database; Appellants' meta-document integrates any results into the meta-document.

Barrera et al. teaches that website content is automatically gathered and stored using a software application called a spider. See col. 4, lines 4-10. Retrieved content is stored in a database. See col. 4, lines 16-18.

Similarly, Doyle stores all search results in a repository or an archive module. See col. 4, lines 54-62.

In Appellants' meta-document, responsive to the autonomous scheduler, any results from the selected document service request are integrated into the meta-document, wherein the meta-document includes the document, the set of document service requests and integrated results.

4. Combining Barrera et al. and Doyle does not overcome the limitations of either.

Neither Barrera et al. nor Doyle is concerned with the problem of passive documents. In Barrera et al., at most a document is an item to be searched. In Doyle, a document is either an item to be searched or a means of defining a topic so that a search request can be defined. In both Barrera et al. search results are stored in an archive or database. In Appellants' meta-document, the results of the document service requests are integrated into the meta-document.

B. Claims 2, 20, 29 are patentable over Barrera et al. (U.S. Patent No. 6,567,800) in view of Doyle (U.S. Patent No. 6,510,432).

Claims 2, 20, and 20 define a personality as one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic. In Appellants' meta-document, the set of document service requests is based on a theme or context, called a "personality." The word personality is used since applying different sets of document service requests to the same document content will provoke different results (i.e., different links and connections), just as people with different personalities will react differently to the same situation. Examples of selected personalities include TechWatch, Scientific, Patent Attorney, Fiction Reader, Trial Attorney, and Generic. Each personality encodes a collection of documents services which will allow the document to act autonomously on behalf of the creator or reader, anticipating the information needs of both the writer and reader of documents, keeping the document connected and up-to-date with the rest of information world. A personality is predetermined set of document service requests.

Barrera et al. does searches based on categories or key words. Barrera et al. states at col. 1, lines 35-38: "by categorizing websites according to the topic or topics to which they pertain." Neither a category, nor a keyword can be considered "a set of pre-packaged document service requests based on a personality associated with the document." Neither a category, nor a keyword can be considered any of the predefined personalities of "Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, and Generic".

Doyle is concerned with the problem of archiving search results. In Doyle, searches are accomplished based on a topic, which is defined at col. 2, lines 15-26. According to Doyle, a topic may be a plurality of keywords and a relationship between them. According to Doyle, a topic may also be specified by identifying a document associated with at least one topic. The document is analyzed to identify characteristics of the document associated with the topic, and then a search is developed based on these characteristics. Doyle has no further use for this document. A topic cannot be considered "a set of pre-packaged document service requests based on a personality associated with the document." Nor can a topic be considered any of the predefined personalities of "Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, and Generic".

VIII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that Claims 1-37 are in condition for allowance. For all of the above reasons, Appellants respectfully request this Honorable Board to reverse the rejections of Claims 1-37.

Respectfully submitted,

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CLAIMS APPENDIX

CLAIMS INVOLVED IN THE APPEAL:

1. (Previously Presented) A document-based system for acquiring information pertaining to a document, comprising:

a computer having a memory storing a meta-document including the document, the document including content information, and a set of pre-packaged document service requests based on a personality associated with the document, wherein a personality comprises a theme or context, wherein a document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information, wherein associating a set of document service requests based on a different personality to the document content information will provide different results; and

a scheduler for autonomously activating and managing the document service requests without user intervention by periodically polling the meta-document for document service requests, for selecting a document service request from the set of document service requests, for initiating and managing communication with a selected service provider to satisfy the selected document service request and for integrating any results from the selected document service request into the meta-document, wherein the meta-document includes the document content, the set of document service requests and integrated results.

2. (Previously Presented) The system of claim 1, wherein the personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic.

3. (Previously Presented) The system of claim 1, wherein the results from the selected document service include a new document service request associated with the document.

4. (Original) The system of claim 1, wherein the document services are satisfied by a third-party service provider via an Internet protocol.

5. (Original) The system of claim 1, wherein the scheduler updates the set of document service requests on a predetermined schedule.

6. (Original) The system of claim 1, wherein the scheduler re-initiates selected document service request on a periodic basis.

7. (Original) The system of claim 6, wherein the periodic basis is determined by the selected document service request.

8. (Original) The system of claim 1, wherein the meta-document, the scheduler and the service providers reside at the same location.

9. (Original) The system of claim 1, wherein the meta-document, the scheduler and the service providers reside at different locations.

10. (Original) The system of claim 1, wherein set of document services follow a pre-determined sequence of calls to service providers for extracting information from other documents, databases and data stores, and for searching for other information responsive to any extracted information from the other documents, databases and data stores.

11. (Original) The system of claim 10, wherein the pre-determined sequence of calls to service providers are satisfiable asynchronously.

12. (Original) The system of claim 1, wherein the document and the set of document service requests are user-selectable.

13. (Original) The system of claim 1, wherein, in addition to the scheduler, a user may select a document service request from the set and initiate and manage communication with a service provider to satisfy the selected document service.

14. (Original) The system of claim 1, further comprising a list of document service requests from which the set of document service requests may be selected by a user.

15. (Original) The system of claim 1, wherein the service provider is user-selectable.

16. (Original) The system of claim 14, wherein a service provider can register additional document services to the list.

17. (Original) The system of claim 1, further comprising a list of service providers available for satisfying document services.

18. (Original) The system of claim 1, wherein the set of document service requests associated with the document are associated using metadata.

19. (Previously Presented) A computer implemented document-centric method for acquiring information pertaining to a document, comprising:

creating a meta-document comprising providing the document, the document including content information, associating a set of pre-packaged document service requests based on a personality with the document, wherein a personality comprises a theme or context, wherein a document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information, wherein associating a set of document service requests based on a different personality to the document content information will provide different results; and

autonomously activating and managing the document service requests without user intervention, comprising:

periodically polling the meta-document for document service requests;

selecting a document service request from the set;

initiating and managing communication with the service provider to satisfy the selected document service request; and

integrating any results from the selected document service request into the meta-

document, wherein the meta-document includes the document, the set of document service requests and integrated results.

20. (Previously Presented) The method of claim 19, wherein the personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic.

21. (Previously Presented) The method of claim 19, wherein the results from the selected document service include a new document service request associated with the document.

22. (Original) The method of claim 19, wherein the document services are satisfied by a third-party service provider via an Internet protocol.

23. (Original) The method of claim 19, further comprising the step of updating the set of document service requests on a predetermined schedule.

24. (Original) The method of claim 19, further comprising the step of re-initiating selected document service requests on a periodic basis.

25. (Original) The method of claim 24, wherein the periodic basis is determined by the selected document service request.

26. (Original) The method of claim 19, wherein the set of document services follow a pre-determined sequence of calls to service providers for extracting information from other documents, databases and data stores, and for searching for other information responsive to any extracted information from the other documents, databases and data stores.

27. (Original) The method of claim 26, wherein the pre-determined sequence of calls to service providers are satisfiable asynchronously.

28. (Previously Presented) A computer-readable medium storing a meta-document,

comprising:

a document including content information;

a set of pre-packaged document service requests based on a personality, associated with the document, wherein a personality comprises a theme or context, wherein a document service comprises a process for using a portion of the document's content information as a starting point to obtain other information from a service provider pertaining to the document's content information, wherein associating a set of document service requests based on a different personality to the document content information will provide different results; and

wherein, responsive to an autonomous scheduler that periodically polls the meta-document for document service requests, a document service request is selected from the set, and communication with a selected service provider to satisfy the selected document service request is initiated and managed; and

wherein, responsive to the autonomous scheduler, any results from the selected document service request are integrated into the meta-document, wherein the meta-document includes the document, the set of document service requests and integrated results.

29. (Previously Presented) The meta-document of claim 28, wherein the personality is one of Tech Watch, Scientific, Patent Attorney, Fiction Reader, Trial Lawyer, Generic.

30. (Original) The meta-document of claim 28, wherein the results from the selected document service includes a new document service request associated with the document.

31. (Original) The meta-document of claim 28, wherein the document services are satisfied by a third-party service provider via an Internet protocol.

32. (Original) The meta-document of claim 28, wherein the scheduler updates the set of document service requests on a predetermined schedule.

33. (Original) The meta-document of claim 28, wherein the scheduler re-initiates

selected document service request on a periodic basis.

34. (Original) The meta-document of claim 33, wherein the periodic basis is determined by the selected document service request.

35. (Original) The meta-document of claim 28, wherein set of document services follow a pre-determined sequence of calls to service providers for extracting information from other documents, databases and data stores, and for searching for other information responsive to any extracted information from the other documents, databases and data stores.

36. (Original) The meta-document of claim 35, wherein the pre-determined sequence of calls to service providers are satisfiable asynchronously.

37. (Original) The meta-document of claim 28, wherein the set of document service requests associated with the document are associated using metadata.

EVIDENCE APPENDIX

NONE

RELATED PROCEEDINGS APPENDIX

NONE